Subject: Re: What does an optimal scientific programming language/environment need?
Posted by David Fanning on Fri, 19 Sep 2003 19:04:43 GMT
View Forum Message <> Reply to Message

grunes writes:

> I'm working on creating an optimal scientific programming language and
> environment.

Humm. Right. Now I see why IDL is still around 20
years later. :-)

Don't forget the EMACS editor with all the color
syntax stuff. And sign me up for the initial release!

Cheers,

David

--
David W. Fanning, Ph.D.
Fanning Software Consulting, Inc.
Phone: 970-221-0438, E-mail: david@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: What does an optimal scientific programming language/environment need?
Posted by Jason Nielsen on Fri, 19 Sep 2003 19:35:40 GMT
View Forum Message <> Reply to Message

On Fri, 19 Sep 2003, grunes wrote:

> 3. Very rapid developement and testing. Requires extreme conciseness,
> support of arrays, complex number, linear algebra, finite element and
> numerical integration of functions and differential equations, and
> little need for type and shape declarations. Can easily switch on
> automatic detection of subscript checking, memory reference checking,
> argument mismatches, fixed and floating point errors. FORTRAN style
> adjustable array bounds (e.g., a(-3:4, 5:7)).

Very efficient built-in univariate and multivariate random number
generation would be a nice touch ;-)!

> 8. A compiled mode that really is as fast as FORTRAN or C, if you add
> those declarations. Compiler would produce 2nd level code for

> compilation by g77 and gcc.

If you could manage this you would definitely get peoples attention.
Most modern array/matrix interpreted languages: Matlab, S-plus, R, Octave,
Euler, IDL, Yorick, Ox, GAUSS etc., etc., etc. have most of your other
points covered. However, all of them suffer from the fact that they are
too slow for intensive simulation. I personally use a couple of these
regularly and when the going gets tough re-code sections that are slowing
things up in Fortran95 for dyn.loading. However writing some code in your
favorite matrix language, adding some type declarations and compiling the
sucker to a fast binary would be a nice touch. The only in-development
project trying for something along these lines is LUSH:

http://lush.sourceforge.net/

Unfortunately they are using the dreaded lisp infix syntax.... urrrggh I
can't stand that ;-)! I suppose I'll just stick with my Python, R,
Matlab, and Fortran95 mix until you are finished your project ;-).

Cheers,
Jason

Subject: Re: What does an optimal scientific programming language/environment need?
Posted by R.G. Stockwell on Fri, 19 Sep 2003 20:11:12 GMT
View Forum Message <> Reply to Message

"grunes" <grunes@yahoo.com> wrote in message
news:2c0d6c85.0309191029.3efe3a99@posting.google.com...
> I'm working on creating an optimal scientific programming language and
> environment.
...
> because I expect this to be a lot of work.

I see your understatement, and raise you an understatement:
Sounds like large project.

Anyways, a graphical language like labview would be nice (where
syntax errors are "impossible"). Perhaps I was the only one looking
forward to VIP.

A complete library of numerical/signal processing algorithms, with fully
working
tutorial-like examples would be ideal.
IDL has a huge library, but I still find myself rolling my own all the time.

Or, variable sytax
" for i = 0, 10 do begin endfor"
" for(i = 0,10){} "
" for k = 1:10   "
" DO 11 I=1,10 "
 " for (int i = 0 ; i < 10 ; i++) {} "

all work (this is because I can never remember the sytnax of the particaly language I am writing in).

.

-bob

Subject: Re: What does an optimal scientific programming language/environment need?
Posted by Ken Plotkin on Sat, 20 Sep 2003 02:35:38 GMT

On 19 Sep 2003 11:29:12 -0700, grunes@yahoo.com (grunes) wrote:

[snip]
> Please add your own criteria!

Free delivery of Twinkies and Jolt Cola.

Subject: Re: What does an optimal scientific programming language/environment need?
Posted by bjorn on Sat, 20 Sep 2003 10:28:31 GMT

grunes@yahoo.com (grunes) wrote in message
news:<2c0d6c85.0309191029.3efe3a99@posting.google.com>...
> I'm working on creating an optimal scientific programming language and
> environment. My hope is that people who use current environments have
> specific things they love about it, that need to be included. For now
> I'm trying to combine the best concepts from FORTRAN, BASIC, C, APL,
> IDL, PV-WAVE, and possibly MATLAB.

Before you start you should look at:

http://www.jsoftware.com/

Subject: Re: What does an optimal scientific programming language/environment need?
Posted by   on Sat, 20 Sep 2003 13:41:35 GMT
View Forum Message <> Reply to Message

"grunes" <grunes@yahoo.com> wrote in message
> I will ignore multiple
> CPU support
>

I think this is a mistake in fact if I was to do the same I would try to
include some multiprocessor support from the ground up not just as an
after thought.

It is my impression that there is a lack here and a good designed
language could spread very fast if it properly addressed this lack.

Do not go for the grail (automatic parallelization) but do not add it as
a kludge latter on either if you get the mix well done I think it will
have lots of demand.

Best regards
Josï¿½ Rui

--
 == ============
"The belief in a supernatural source of evil is not necessary; men alone
are quite capable of every wickedness". Joseph Conrad
 == ============
mailto://jrfsousaMOTYWC@esoterica.pt/ Crawler baith. UnCaps me to reply.
Contact information: http://homepage.esoterica.pt/~jrfsousa/contact.html
 == ============

Subject: Re: What does an optimal scientific programming language/environment need?
Posted by David Frank on Sun, 21 Sep 2003 15:10:27 GMT
View Forum Message <> Reply to Message

"grunes" <grunes@yahoo.com> wrote in message
news:2c0d6c85.0309191029.3efe3a99@posting.google.com...
> I'm working on creating an optimal scientific programming language
and
> environment. My hope is that people who use current environments
have
> specific things they love about it, that need to be included. For
now

> I'm trying to combine the best concepts from FORTRAN, BASIC, C, APL,
> IDL, PV-WAVE, and possibly MATLAB.
>

Hmmm, yours would be programming language #921 according to below:

 http://www.theinquirer.net/?article=11651http://www.theinqui rer.net/?article=11651

Subject: Re: The Inquirer likes Fortran
Posted by David Frank on Sun, 21 Sep 2003 15:25:39 GMT
View Forum Message <> Reply to Message

I screwed up the link, trying again... (it has some interesting
pro-Fortran, anti-C views expressed)

http://www.theinquirer.net/?article=11651

Subject: Re: What does an optimal scientific programming language/environment need?
Posted by John Sullivan on Sun, 21 Sep 2003 16:29:12 GMT
View Forum Message <> Reply to Message

In message <Dbjbb.20886$Od.764849@twister.tampabay.rr.com>, David Frank
<dave_frank@hotmail.com> writes
>
> "grunes" <grunes@yahoo.com> wrote in message
> news:2c0d6c85.0309191029.3efe3a99@posting.google.com...
>> I'm working on creating an optimal scientific programming language
> and
>> environment. My hope is that people who use current environments
> have
>> specific things they love about it, that need to be included. For
> now
>> I'm trying to combine the best concepts from FORTRAN, BASIC, C, APL,
>> IDL, PV-WAVE, and possibly MATLAB.
>>
>
> Hmmm, yours would be programming language #921 according to below:
>
> http://www.theinquirer.net/?article=11651http://www.theinqui rer.net/?art
> icle=11651
>
>
If you follow the link to the 920 programming languages on page
http://wombat.doc.ic.ac.uk/foldoc/contents/language.html

you will see that at least 5 languages are missing:
  A, A+, J, K, Q-Nial
--
John Sullivan
Please note that any disclaimer on email to me does not
apply, because I have not agreed with it. If your lawyers
disagree, please ask them to study the law of contract.

Subject: Re: What does an optimal scientific programming language/environment need?
Posted by wgrayg on Tue, 14 Oct 2003 22:36:38 GMT
View Forum Message <> Reply to Message

Sign me up for the Jolt !! None in this state...

Ken Plotkin wrote:

> On 19 Sep 2003 11:29:12 -0700, grunes@yahoo.com (grunes) wrote:
>
> [snip]
>> Please add your own criteria!
>
> Free delivery of Twinkies and Jolt Cola.

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----